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NPIC/D-191-64
30 NOV 1964

MEMORANDUM FOR: Assistant Deputy Director (Intelligence) for Management

SUBJECT: Research and Development Project Approval Request for Overrun on [redacted] "Panoramic Stereo Viewer" 25X1A

REFERENCE: DDCI Memorandum ER 63-6821, Dated 23 December 1963: Approval of Research and Development Activities

In compliance with paragraph 5.b. of the reference, it is requested that additional funding in the amount of [redacted] to cover the overrun 25X1A on a Panoramic Stereo Viewer prototype as outlined in Annex "A" be approved. With this overrun, the funds expended and allocated for this 25X1A project will total [redacted] 25X1A

ARTHUR C. LUNDAHL
Director,
National Photographic Interpretation Center

25X1A APPROVED: /s/ [redacted] 1 Dec 64
Date

Assistant Deputy Director (Intelligence)
for Management

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25X1A LB/SS/NPIC/[redacted] 16 November 1964)

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[redacted]

RESEARCH AND DEVELOPMENT
PROJECT APPROVAL REQUEST

I. Identification

This project was programmed by NPIC under the Photo Interpretation category of development for Fiscal Year 1962. Its internal designation is Project #2002, Panoramic Stereo Viewer, Prototype. Thus far a total 25X1A of [redacted] has been allocated to the project, and the contractor has requested additional funding in the amount of [redacted] to complete it. 25X1A

II. Objectives

The project was initiated to provide an instrument for viewing stereo images on conventional, convergent and panoramic stereo roll film regardless of scale, format, orientation, or obliquity. NPIC does not have a satisfactory instrument which is capable of accommodating all these variables. The instrument is to be used as a Photo Interpretation Viewer.

III. Background

25X1A [redacted] has encountered several problems in completing a satisfactory stereo viewer capable of handling conventional, convergent and panoramic stereo roll film. The most serious of these concern the manual X-drive, film curl, glass drums, gear noise, the indicator for image rotation, and several other minor items.

25X1A After inspecting the instrument last fall, the monitor informed the contractor that these deficiencies had to be corrected. [redacted] 25X1A [redacted] reviewed the problems and in February 1964 submitted a proposal for modifications and request for additional funds in the amount of 25X1A [redacted] to complete the viewer. However, a number of the proposed modifications were unacceptable, and the request was refused. The 25X1A technical monitor informed [redacted] that until they demonstrated solutions to these problems at company expense, no action would be taken to increase funds.

25X1A Since February, [redacted] technical personnel have performed a thorough review of the Panoramic Stereo Viewer. As a result, solutions of some of the problems have been covered with [redacted] funds or modifications have been proposed that appear to be satisfactory. 25X1A

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On the present instrument, film tension is maintained at a high level to assure adequate friction between the film and the drum surface for the film to drive the drum when in motor drive and for the drums to drive the film when in manual drive. It was also found necessary to add rubber bands to the drums to provide a sufficient coefficient of friction between drum and film.

The proposed modification will eliminate the need for bands, and [redacted] estimates that the film tension will be reduced by approximately one-half. This should eliminate the film curl that causes scalloping and tearing of film edges. All motor drives presently on the instrument will be used, and the manual control handwheels will be retained. The primary drive modification will be made in the mechanical linkage from the handwheels to the drums, and friction and idler rollers will be added to the film loop over the drum.

25X1A

The present handwheels drive the film manually in the X-direction. Instead of driving the drum by way of a flexible shaft to a large gear on the drum, the flexible shaft will be gear-connected to the friction rollers, which in turn will drive the film and the surface of the drum simultaneously and at the same speed.

A breadboard of the friction system and idler rollers of the proposed drive modification has been installed in the instrument. The tests conducted with this breadboard indicate that the modification will be satisfactory and will permit reduction of the film tension.

[redacted], has obtained a subcontractor who has successfully produced four glass drums. Two of these will replace the two plexiglass drums now on the viewer and the other two will be spares. The glass drums are dimensionally more accurate and considerably more resistant to abrasion than the plastic drums. New drum mounts will be required because of the differences in dimensions of the drums and the expansion characteristics of glass.

25X1A

The steel drive gears in the X-drive have been replaced with fiber gears. This change has considerably reduced the noise and is judged to be a satisfactory solution to the problem.

The prism rotation rings for image rotation will be replaced with rings similar to those approved for the production models of the [redacted] Microstereoscope. The rings indicate the image rotation for every 15 degrees.

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At the lower magnifications the projection lamps are used at low voltage and consequently operate at a low color temperature which introduces a noticeable amount of yellow in the viewing area. There is also a hot spot in the center of the field at low magnification.

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A blue ground-glass diffuser, tested with the anamorphic condenser, is located near the film plane: it eliminates the hot spot and filters out the objectionable yellow portion of the spectrum. [redacted] proposes to permanently mount similar diffusers to the anamorphic condenser mounts. 25X1A

There will also be several minor modifications to improve performance and stability of the instrument.

IV. Technical Specifications

The Panoramic Stereo Viewer is designed for viewing stereo images on two rolls of conventional, convergent and panoramic stereo roll film. It will accept film in widths ranging from 70 mm to 9½ inches and reels up to 10½ inches in diameter. Two motorized film drives can be operated independently or synchronized.

A variable magnification binocular optical system will provide magnifications from 3X to 48X. Each half of the optical system can be adjusted separately or the two sides may be coupled for synchronized changes. Each optical path contains an element allowing an independent 360° image rotation.

V. Contract and Financial Arrangements

Funds are currently allocated to the contract in the amount of [redacted] has accumulated expenditures totaling [redacted] and has requested an additional [redacted] to complete the stereo viewer. Accumulated expenditures are adjusted to actual rates for 1962 and 1963 as well as provisional rates for 1964. 25X1A 25X1A

[redacted] estimates that the Panoramic Stereo Viewer can be completed within 120 days after approval is given for additional funds. Approval of the subcontractor who ground and polished the glass drums is also required. Cost of the subcontract was [redacted] 25X1A 25X1A

This funding constitutes an overrun to complete a nearly finished experimental prototype for operational test and evaluation. Sole source procurement is the only reasonable contracting arrangement.

VI. Coordination

Staff coordination has been accomplished with interested parties in NPIC through the Technical Development Committee of NPIC. The additional funding was recommended by the Committee.

VII. Security Arrangements

This contract will continue to be classified Confidential, [redacted] 25X1A

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VIII. Recommendations

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Additional funding in the amount of [redacted] should be authorized for completing the [redacted] Stereo Viewer. This will increase the total contract cost to $[redacted]

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